

What is claimed is:

1. A wireless transmission system for conducting data transmission over a wireless field in which data transmission slots of a fixed size are periodically allocated to the wireless field, the wireless transmission system comprising:

5 a memory for retaining a wireless send queue whose members are transmission data awaiting transmission;

linking means for linking multiple transmission data to form members of the wireless send queue;

10 wireless send means for loading a wireless send queue member output from the memory in a data transmission slot; and

control means responsive to output of a wireless send queue member from the memory for controlling retention of a next wireless send queue member in the memory.

2. A wireless transmission system according to claim 1, wherein the control means monitors the number of wireless send queue members retained in the memory and effects control for retaining the next wireless send queue member in the memory when no wireless send queue member is retained or the number of retained wireless send queue members is smaller than at the time of the preceding memory output.

3. A wireless transmission system according to claim 1, wherein the control means effects control for retaining the next wireless send queue member in the memory synchronously with output of a wireless send queue member from the memory.

4. A wireless transmission system for conducting data transmission over a wireless field in which data transmission slots of a fixed size are periodically allocated to the wireless field, the wireless transmission system comprising:

a memory for retaining a wireless send queue whose members are transmission data awaiting transmission;

30 linking means for successively linking and inserting multiple transmission data in the members of the wireless send queue retained in the memory;

wireless send means for loading a wireless send queue member output from the memory in a data transmission slot; and

35 control means, responsive to output from the memory of a wireless send queue member under link/insertion processing or to a condition in which loading of next transmission data in a wireless send queue member under link/insertion processing would make its size larger than the data transmission slot, for shifting the processing of the linking means to processing for linking and inserting transmission data in the next wireless send queue retained in the memory.

5. A wireless transmission system according to claim 4, wherein:
the memory and control means are constituted as a physical module connected to an
internal bus;
the module is provided with a bus interface for forwarding a wireless send queue
5 member output from the memory to the wireless send means; and
the control means compares the size of an empty region of the wireless send queue
member under link/insertion processing with the size of the next transmission data to be
linked and inserted and shifts the link/insertion processing to the next wireless send queue
member.

10 6. A wireless transmission system for conducting wireless communication between
a base station and at least one customer station using fixed-length data communications
channels, the wireless transmission system comprising:

15 a buffer for retaining frames to be sent in at least one of the base station and the
customer station;
a comparing means for comparing the size of a frame to be sent retained in the buffer
and the size of an empty region of a wireless send queue member; and
a loading means for loading a loadable number of frames to be sent in the same data
20 communications channel.

25 7. A wireless transmission system for conducting wireless communication using
fixed-length data communications channels, the wireless transmission system comprising:
a buffer for retaining frames to be sent;
a comparing means for comparing the size of a frame to be sent retained in the buffer
and the size of an empty region of a data communications channel; and
a loading means for loading a loadable number of frames to be sent in the data
communications channel.

30 8. A wireless transmission system according to claim 7, wherein the multiple
frames to be sent are loaded in a single data communications channel together with
intervening data for indicating their boundaries.